CLAIMS

1. A solid support for absorbing a biomolecule, comprising:

   (a) a substrate having a surface coating with a surface reactive site; and

   (b) a non-nucleotide polymer on said surface reactive site with an absorbing moiety for absorbing at least a portion of said biomolecule.

2. The solid support of claim 1, wherein the absorbing moiety of said biomolecule is endogenous thereto.

3. The solid support of claim 1, wherein said non-nucleotide polymer is produced *in situ* on said surface reactive site.

4. The solid support of claim 1, wherein said non-nucleotide polymer is pre-synthesized and deposited on said surface reactive site.

5. The solid support of claim 1, wherein the absorbing moiety of said biomolecule is an exogenous linking moiety.

6. The solid support of claim 1, wherein said non-nucleotide polymer is substantially linear.

7. The solid support of claim 1, wherein said polymer is a vinyl polymer.

8. The solid support of claim 7, wherein said vinyl polymer is poly(vinylamine).

9. The solid support of claim 1, wherein said absorbing moiety is pendent to the polymer backbone.

10. The solid support of claim 1, wherein said biomolecule comprises an oligonucleotide or a polynucleotide.

11. The solid support of claim 1, further comprising an additional non-nucleotidic polymer tethered to the surface coating.

12. The solid support of claim 1, wherein said biomolecule is a probe capable of associating with a target species.

13. The solid support of claim 12, wherein said probe is an oligomeric molecule capable of hybridization.

14. The solid support of claim 13, wherein said oligomeric molecule is an oligonucleotide or polynucleotide.

15. The solid support of 10, wherein said probe comprises an oligopeptide or polypeptide.

16. The solid support of claim 1, wherein said surface coating comprises a material selected from the group consisting of polystyrene, agarose, dextran, cellulosic polymers, polyacrylamides and glass.

17. A solid support having a biomolecule adsorbed thereon, comprising:

(a) a surface coating having at least one surface reactive site, and

(b) a non-nucleotide polymer on said surface reactive site with an absorbing moiety capable of absorbing at least a portion of a biomolecule.

18. The solid support of claim 17, wherein a portion of said biomolecule is endogenous thereto.

19. The solid support of claim 17, wherein a portion of said biomolecule is an exogenous linking moiety.

20. The solid support of claim 17, wherein said polymer is substantially linear.

21. The solid support of claim 17, wherein said polymer is a vinyl polymer.

22. The solid support of claim 21, wherein said vinyl polymer is poly-(vinylamine).

23. The solid support of claim 17, wherein said absorbing moiety is pendent to the polymer backbone.

24. The solid support of claim 17, wherein said biomolecule comprises an oligonucleotide or a polynucleotide.

25. The solid support of claim 17, further comprising an additional non-nucleotidic polymer tethered to the surface coating, and comprising additional adsorbing moieties to adsorb an additional biomolecule.

26. The solid support of claim 17, wherein said biomolecule is a probe capable of associating with a target species.

27. The solid support of claim 26, wherein said probe is an oligomeric molecule capable of hybridization.

28. The solid support of claim 27, wherein said oligomeric molecule is an oligonucleotide or polynucleotide.

29. The solid support of 28, wherein said probe comprises an oligopeptide or polypeptide.

30. The solid support of claim 17, wherein said surface coating comprises a material selected from the group consisting of polystyrene, agarose, dextran, cellulosic polymers, polyacrylamides and glass.

31. A process for preparing a solid support capable of adsorbing a biomolecule, comprising:
    (a) providing a surface coating having a surface reactive site thereon, and
    (b) contacting the surface coating with a polymerizable composition under polymerizable conditions to produce a surface tethered polymer with at least one absorbing moiety for absorbing a biomolecule.

32. The process of claim 31, wherein a portion of said biomolecule is endogenous thereto.

33. The process of claim 31, wherein a portion of said biomolecule is an exogenous linking moiety.

34. The process of claim 31, wherein said polymer is substantially linear.

35. The process of claim 31, wherein said polymer is a vinyl polymer.

36. The process of claim 31, wherein said absorbing moiety is an amine group.

37. The process of claim 35, wherein said vinyl polymer is a poly-(vinylamine).

38. The process of claim 31, wherein said biomolecule comprises an oligonucleotide or polynucleotide.

39. The process of claim 31, further comprising an additional non-nucleotidic polymer tethered to said surface coating, comprising additional adsorbing moieties for absorbing additional biomolecules.

40. A process for preparing a solid support containing a probe biomolecule capable of hybridization to a target species, comprising:

(a) providing a surface coating having surface reactive sites,

(b) contacting the surface coating with a polymerizable composition under polymerization conditions to produce a surface tethered polymer thereon, wherein the polymerization composition is such that the surface-tethered polymer has adsorbing sites for adsorbing biomolecules capable of assuming a plurality of conformations, and further wherein the polymer backbone exhibits sufficient mobility and flexibility such that the number of biomolecules adsorbed by the adsorbing moieties is maximized; and

(b) contacting the surface tethered polymer with the probe biomolecule.

41. The process of claim 40, wherein a portion of said biomolecule is endogenous thereto.

42. The process of claim 40, wherein a portion of said biomolecule is an exogenous linking moiety.

43. The process of claim 40, wherein said polymer backbone is substantially linear.

44. The process of claim 40, wherein said polymer is a vinyl polymer.

45. The process of claim 40, wherein said adsorbing moieties are amine groups.

46. The process of claim 42, wherein said vinyl polymer is a poly-(vinylamine).

47. The process of claim 38, wherein said biomolecule comprises an oligonucleotide or polynucleotide.

48. The process of claim 40, further comprising an additional non-nucleotidic polymer tethered to said surface coating, comprising additional adsorbing moieties adapted to adsorb an additional biomolecule.